

Amy Humke, PhD

Mundelein, IL

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Professional Summary

Data Scientist with 3 years of hands-on modeling experience and a background in analytics leadership. Builds classification models, sequential forecasts, and drift detection systems that drive strategic decisions. Recent work includes deploying a production-grade enrollment model, creating a project charter chatbot using agentic AI, and leading MLOps migration of 50+ notebooks. Known for fearlessly tackling new challenges, translating insights into action, and delivering reliable solutions in high-stakes environments.

Core Competencies

Programming & Modeling

Python • SQL • Supervised & Unsupervised Learning • Neural Networks • Decision Trees • Logistic/Linear Regression • Clustering • Time Series Forecasting

Machine Learning & AI Methods

Predictive Modeling • Drift Detection • Feature Engineering • Agentic AI Design • Prompt Engineering • Model Interpretability (SHAP)

Platforms & Tools

Databricks • MLflow • MARVIN MLOps • Tableau • Power BI • Git • Jupyter Notebooks

Business & Decision Support

Stakeholder Alignment • A/B Testing • Root Cause Analysis • Project Scoping • Control Charts • KPI Monitoring & Alerting

Education

University of Nebraska – Lincoln

- Ph.D., Psychology | M.A., Social Psychology | M.L.S., Law and Psychology

University of Iowa

- B.S., Psychology | B.A., Music
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Experience

Western Governors University

Data Scientist, Outreach Analytics | Oct 2024 – Present

- **Reduced marketing spend** by an estimated 5% through modeling with XGBoost to prioritize high-likelihood applicants, enabling better outreach decisions and resource targeting.
- **Enabled future budget planning** with a 16-month sequential forecast built in XGBoost to inform long-term program planning.
- **Optimized the new start forecast** by leading the MLOps migration of 50+ notebooks into the MARVIN MLOps framework.
- **Improving self-serve enrollment** through the development of an agentic AI chatbot which will serve as a virtual enrollment counselor guiding applicants through the enrollment process.

Analytics Manager, Enrollment | May 2022 – Oct 2024

- **Reduced funnel attrition** by 3% with a real-time Tableau dashboard integrating control charts and KPI alerts.
- **Improved applicant engagement timing** by running A/B tests revealing time-sensitive effects that helped marketing teams refine outreach strategies for better impact.

McHenry County College

Director of Institutional Research | Dec 2012 – May 2022

- **Increased developmental course success** by 4% through co-requisite program analysis using quasi-experimental methods.
- **Influenced executive decisions** through 40+ dashboards and climate survey analysis that lifted employee satisfaction above national benchmarks and informed strategy.

Certifications

- Machine Learning & AI Foundations (2025)
- Tableau Certified Data Analyst (2023–2025)

Awards & Leadership

- **Trailblazer Award**, FY25 Q1 – WGU Office of the CFO
- **President**, Illinois Association for Institutional Research (2020–2021)
- Doctoral Dissertation Grant – National Science Foundation